

## PATENT SPECIFICATION

618.356



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Index at acceptance:—Class 100(ii), B22b.

## PROVISIONAL SPECIFICATION

## Improvements in Silk Screen Printing Apparatus

I, ALEC LOUIS KAPLOWITCH, a British Subject, of 83, Commercial Street, London, E.1, do hereby declare the nature of this invention to be as follows:—

5 This invention relates to improvements in manually operated silk screen printing apparatus of the kind in which a squeegee carriage is adapted to be manually reciprocated backwards and forwards across  
10 the screen and carries a pair of squeegees disposed in inverted V or like formation, the said squeegees being so mounted in the carriage that the following squeegee is pressed into engagement with the screen  
15 whilst the leading squeegee is lifted clear of the screen whichever way the carriage is moved over the screen. Now with such apparatus it will be appreciated that the printing depends on the pressure with  
20 which the squeegee presses on the screen and unless an even pressure is maintained during the whole of the printing operation an unsatisfactory print will be obtained. The chief object of the present invention  
25 is to provide means for ensuring that a constant pressure of the squeegee can be maintained throughout the whole printing operation even by an unskilled operator.

30 According to the present invention, manually releasable means are provided for locking the squeegee in such a position that it bears with the required pressure on the screen.

35 The manually releasable means are preferably controllable from the handles employed for moving the squeegees backwards and forwards over the screen and may comprise retractable pins adapted to  
40 take into pre-selected holes in a locking plate over which the handles are moved to adjust the position of the squeegees prior to moving the squeegee carriage backwards and forwards across the screen.

45 Describing now by way of example one convenient embodiment of the present invention, the silk screen printing apparatus is substantially the same as described

in co-pending Patent Application No. 236/45, to which reference may be made for the general construction and operation of the apparatus. According to the principal feature of the present invention, the squeegee carriage is provided with two locking plates, one for each  
55 handle, these locking plates conveniently extending out from the front of the squeegee carriage and each being provided with an arcuate row of holes or detents concentric with the axis of movement of the handles. At the points where they pass over or under these locking  
60 plates, the handles are provided with retractable pins adapted to engage with the holes or detents in the locking plates. Conveniently, the pins are adapted to be controlled by means of pivoted arms to which they are secured, movement of the  
65 pivoted arms being effected by means of spring-controlled plungers or rods passing down the upturned portions of the handles. It will be appreciated that, if the pins be engaged with the locking  
70 plates when the handles have been moved to such an extent as to cause the squeegee to bear with the desired pressure on the screen, the squeegee will be locked in this position and will bear with the same pressure on the screen throughout the whole  
75 of its traverse. At the ends of a traverse, the pins are disengaged by depressing the plungers, the handles are moved to cause the other squeegee to bear with the required pressure on the screen and the pins re-engaged to lock the squeegee. With  
80 a view to ensuring the same pressure on each traverse, pre-set stop pins may be inserted in the locking plates, the handles being moved up to these stops, whereupon the pins will engage with the next inner  
85 holes in the locking plates.

According to a further feature of the present invention, the side runners on which the squeegee carriage travels are made substantially oval or octagonal in  
90 cross-section to reduce play.

[Price 2/-]

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Dated this 30th day of September,  
1946.

LESLIE N. COX,  
Patent Agent,  
329, High Holborn, London, W.C.1,  
Agent for the Applicant.

## COMPLETE SPECIFICATION

### Improvements in Silk Screen Printing Apparatus

I, ALEC LOUIS KAPLOWITCH, a British Subject of 83, Commercial Street, London, E.1, do hereby declare the nature of this invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to improvements in manually operated silk screen printing apparatus of the kind in which a squeegee carriage is adapted to be manually reciprocated backwards and forwards across the screen on runners which are spaced above the frame and carries a pair of squeegees disposed in inverted V or like formation, the said squeegees being so mounted in the carriage that the following squeegee is pressed into engagement with the screen whilst the leading squeegee is lifted clear of the screen whichever way the carriage is moved over the screen. Now with such apparatus it will be appreciated that the printing depends on the pressure with which the squeegee presses on the screen and unless an even pressure is maintained during the whole of the printing operation an unsatisfactory print will be obtained. The chief object of the present invention is to provide means for ensuring that a constant pressure of the squeegee can be maintained throughout the whole printing operation even by an unskilled operator.

According to the present invention, manually releasable means are provided for locking the squeegee in such a position that it bears with the required pressure on the screen.

The manually releasable means are preferably controllable from the handles employed for moving the squeegees backwards and forwards over the screen and may comprise retractable pins adapted to take into pre-selected holes in locking plates over which the handles are moved to adjust the position of the squeegees prior to moving the squeegee carriage backwards and forwards across the screen.

In order that this invention may be the more clearly understood and readily carried into effect reference may be made to the accompanying drawings which illustrate by way of example the preferred embodiment of this invention and in which:—

Figure 1 is a perspective view of the complete manually operable silk screen printing apparatus according to the present invention, certain parts being broken away the more clearly to show the construction.

Figure 2 is a plan view of part of the squeegee carriage showing the means for locking the squeegee in such a position that it bears with the required pressure on the screen, and

Figure 3 is a side elevation thereof.

Referring now to the accompanying drawings, the silk screen printing apparatus is substantially the same as that described in co-pending Patent Application No. 236/45 (Serial No. 593,582), and comprises a table 10 which may of course be of any shape and size having hinged thereto at 11 the frame 12 of the silk or like screen 13. The forward end of the screen frame is normally clamped to the table 10 by means of the hinged clip 14 and counter-balance weights 15 are provided to facilitate the raising of the frame when it is desired to remove a print.

Runners 16 are provided one at each side of the frame these runners being supported at the right height above the frame 12 by means of brackets 17. Conveniently the runners 16 are in the form of round oval or like rods and are slotted at their ends to take about the edges of the brackets 17. At their forward ends the runners are secured to the brackets by means of split pins, the rear ends being secured by plain pins 19.

Arranged on the runners 16 is the squeegee frame 20 which is provided with upper and lower sets of ball-bearing rollers 21 to facilitate its movement backwards and forwards along the runners 16. The squeegee frame is provided with downwardly depending end brackets 22 in the lower ends of which is pivoted a squeegee carrier 23. This squeegee carrier may comprise an angular piece of metal of the required length, the squeegees proper, which are formed of strips of rubber one of which can be seen at 24, being suitably secured one to each flange of the carrier 23.

To secure the desired operation of the apparatus it is necessary that the squeegee carrier 23 should rock on its pivots in such

a manner that whatever be the direction of movement of the squeegee carriage on the runners 16 the following squeegee is kept in contact with the screen 13 whilst the leading squeegee is raised clear of the same.

To this end the squeegee carriage 20 is provided with spaced plates 30 in which are mounter vertical spindles 31. At their lower ends the spindles are provided with slotted arms one of which can be seen at 32. The slotted arms extend away from each other in opposite directions and engage pins one of which can be seen at 33 upstanding from the squeegee carrier 23. By turning the spindles 31 the squeegee carrier 23 can thus be rocked about its pivots to secure the desired operation. The means for turning the spindles comprise elongated handles 34 extending forwardly and having up-turned ends 35.

According to the present invention, the squeegee carriage 20 is provided with two locking plates 40, one for each handle 34, these locking plates 40 conveniently extending out from the front of the squeegee carriage 20 and each being provided with an arcuate row of holes or detents 41 concentric with the axis of movement of the handles 34. At the points where they pass over or under these locking plates, the handles are provided with retractable pins 42 adapted to engage with the holes or detents 41 in the locking plates 40. Conveniently, the pins 42 are adapted to be controlled by means of pivoted arms 43 to which they are secured, movement of the pivoted arms 43 being effected by means of spring-controlled plungers or rods 44 passing down the upturned portions 35 of the handles 34. It will be appreciated that, if the pins 42 be engaged with the locking plates 40 when the handles 34 have been moved to such an extent as to cause the squeegee 24 to bear with the desired pressure on the screen 13, the squeegee 24 will be locked in this position and will bear with the same pressure on the screen throughout the whole of its traverse. At the ends of a traverse, the pins 42 are disengaged by depressing the plungers 44, the handles 34 are moved to cause the other squeegee to bear with the required pressure on the screen 13 and the pins 42 re-engaged to lock the squeegee. With a view to ensuring the same pressure on each traverse, pre-set stop pins 45 may be inserted in the locking plates, the handles being moved up to these stops, whereupon the pins will engage with the next inner holes in the locking plates.

Patent No. 567,896 relates to manually operated silk screen printing apparatus of

the kind in which a squeegee carriage is adapted to be manually reciprocated backwards and forwards across the screen and carries a pair of squeegees disposed in inverted vee-formation, the said squeegees being so mounted in the carriage that the following squeegee is pressed into engagement with the screen whilst the leading squeegee is lifted clear of the screen whichever way the carriage is moved over the screen, and there is claimed therein apparatus of this kind and in which the squeegee carriage is adapted to slide backwards and forwards on a runner frame carried by the screen frame, which is characterised in that the two squeegees are carried by end brackets pivotally mounted in the carriage and in that the carriage is provided with a pair of pivoted handles for moving the carriage backwards and forwards across the screen, the said brackets being so coupled to the handles that as the handles are moved from a pulling to a pushing position for moving the carriage the brackets are swung about their pivots to position the squeegees in the desired way.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

1. Manually operated silk screen printing apparatus of the kind set forth characterised by the provision of manually releasable means for locking the squeegee in such a position that it bears with a predetermined pressure on the screen.

2. Manually operated silk screen printing apparatus according to Claim 1 in which the manually releasable means are controllable from the handles employed for moving the squeegees backwards and forwards over the screen.

3. Manually operated silk screen printing apparatus according to Claim 1 or Claim 2 in which said manually releasable means comprise retractable pins adapted to take into pre-selected holes in locking plates over which the handles are moved to adjust the position of the squeegees prior to moving the squeegee carriage across the screen.

4. Manually operated silk screen printing apparatus according to Claim 3 characterised by the provision of pre-set stop pins adapted to be inserted in said locking plate to limit the movement of the handles to a pre-determined extent.

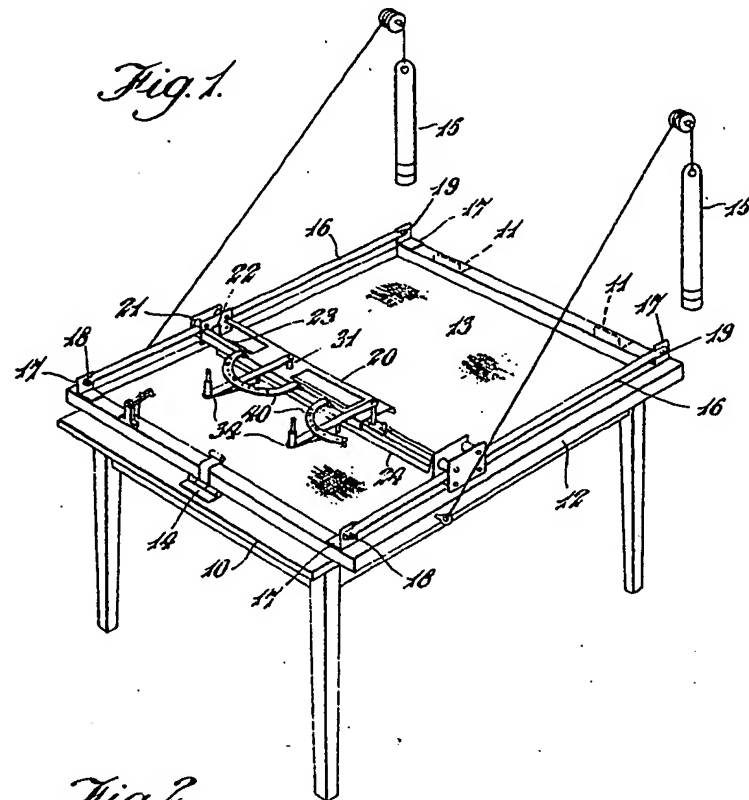
5. The improved manually operated silk screen printing apparatus substantially as hereinbefore described with reference to the accompanying drawings.

Dated this 8th day of October, 1947.

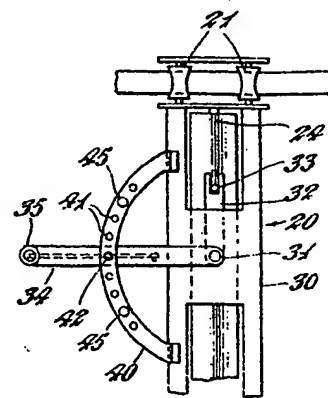
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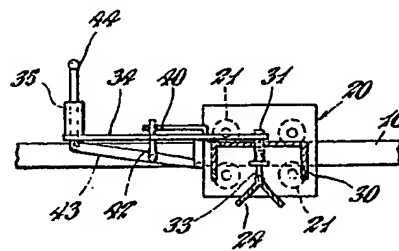
[This Drawing is a reproduction of the Original on a reduced scale.]



*Fig. 2.*



*Fig. 3.*



H.M.S.O. (Ty. P.)

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